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NRO REVIEW COMPLETED

7 DEC 1962

MEMORANDUM FOR : Director of Central Intelligence

SUBJECT : OXCART Program Status

REFERENCES : A. Memorandum to Director of Central Intelligence from Deputy Director (Research), dated 21 November 1962; Subject: OXCART Program Status

B. Memorandum to Director of Central Intelligence from Deputy Director (Research), dated 7 May 1962; Subject: OXCART Program (OXC-3459)

C. Memorandum for the President signed by Secretary of Defense and Director of Central Intelligence, dated 20 March 1962; Subject: Status of Ultrasecret Reconnaissance Systems

1. This memorandum is for your information. The significant items reported in the reference memoranda and additional developments in the OXCART program are summarized in the following paragraphs.

2. Since the first flight in April, 91 flight hours in 74 flights have been made with two aircraft now in flight status. One of these has two J-75 substitute engines installed and the other has one J-75 and one J-58 engine. Approximately 14 1/2 hours in 18 flights have been made with this composite installation.

a. One additional aircraft has been used in ground radar range tests and is now being prepared for flight tests. Two more airframes are scheduled for completion this month and will be outfitted for flight test in January. Barring a premature engine removal there should be just sufficient J-58 engines for three of the total of five aircraft expected to be flying in January.

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5. Each of the three camera types being developed, one by Perkin-Elmer, one by Eastman-Kodak, and a modification to the camera used in the U-2, have been tested in the OXCART aircraft in low speed flight. A fourth camera type of significantly longer focal length and of the framing variety rather than the panoramic type of Perkin-Elmer and Eastman-Kodak will be built by Hycon, who made the U-2 camera. The first of these has been promised in four months.

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7. Other critical components including the inertial navigation system, autopilot, engine air induction system, and pilot personal equipment, all specially developed for this program, have performed well within the limits of testing so far.

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8. The most serious roadblock at present is the critical shortage of J-58 engines and their inferior performance at this stage. A year ago problems in using, in a practical way, the new structural material, titanium, used in the airframe made aircraft availability a limiting factor. These difficulties have been overcome and the slow and painful production and testing of the highly complex engine fuel control is limiting the number of complete J-58 engines available today. Special measures in manufacturing and testing are being taken by [redacted] Pratt & Whitney, which promise to bring engine availability in line with aircraft. Although this picture changes daily, the status of airframes, engines and engine controls at the time of writing is shown in an attached table.

9. Last May under 4000 ground test hours had been gained on the J-58 engine. Today over 5500 test hours have been accumulated. Until recently the object of testing was largely to assure durability and safety of operation of the engine. In the process many small, individually unimportant performance-wise, changes were made to achieve reliability in this previously unflown engine. Now attention has shifted to means to regain loss in engine thrust and to overcome the increased weight and fuel consumption resulting from all of the durability measures.

10. Several performance improvement changes are to be incorporated in J-58 engines between now and next March which will mean that aircraft maximum altitude will be increased from 87,000 feet with today's engine performance [redacted]

11. In the next few months maximum effort will be put into reaching the intended speed and altitude so that the cameras and other components can be checked under the high temperature high altitude operational environment. Unless technical problems greater than now foreseen are disclosed in testing under these conditions it may be possible to begin initial limited OXCART operational activity by late next summer. The first group of operational pilots are now in program training, bases for aerial refueling tankers are being provisioned and other logistic and operational preparations are now being made in this expectation.

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Attachment

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ATTACHMENT TO:

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TABLE I

Status of Airframes, J-58 Engines and Controls - 5 December 1962

<u>Airplane Number</u>	<u>Status</u>	<u>Engine</u>	<u>Control</u>
1	Flying	J-58 #5 J-75 to be replaced by J-58 #4	Present control must be replaced; replace- ment available.
2	Fitting out for flight this month	J-58's #6 and #7 being fitted	#6 has control #7 lacks control; control available
3	Flying	Two J-75's	No problem
4	Fitting out	Two J-75's available	No problem
5	To be delivered this month	J-58's #8 and #10	To be supplied from group of 16 controls in fabrication and check out; 3 controls now in final test.
6 - 10	To be delivered in January - August	35 J-58 engines promised January - August	Control delivery ex- pected to match engine delivery based on measures taken with group of 16 controls

Note: J-58 #1 being used for cannibalization of parts J-58's #2 and #3 being rebuilt and expected available in January and February. J-58 #8 in use as fitting mock-up at Burbank.